Air Quality Permitting
Technical Memorandum

November 5, 2002

Tier II Operating Permit and Permit to Construct No. 055-00039

MERRITT BROTHERS LUMBER COMPANY
ATHOL, IDAHO

Project No. T2-020103

Prepared By:

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Environmental Quality Management, Inc.

FINAL PERMIT

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LIST OF ACRONYMS, UNITS, AND CHEMICAL NONMENCLATURE

acfm	actual cubic feet per minute
AFS	AIRS Facility Subsystem
AIRS	Aerometric Information Retrieval System
AQCR	Air Quality Control Region
BACT	Best Available Control Technology
CFR	Code of Federal Regulations
CO	carbon monoxide
DEQ	Idaho Department of Environmental Quality
dscf	dry standard cubic feet
EF	emission factor
EPA	United States Environmental Protection Agency
EQ	Environmental Quality Management, Inc.
gr	grain (1 lb = 7,000 grains)
HAPs	Hazardous Air Pollutants
IDAPA	A numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
lb/hr	pound per hour
MACT	Maximum Available Control Technology
MMbf	million board feet
NESHAP	Nation Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O_3	ozone
PM	particulate matter
PM_{10}	particulate matter with an aerodynamic diameter of 10 micrometers or less
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTC	permit to construct
PTE	potential to emit
SCC	Source Classification Code
scf	standard cubic feet
SIC	Standard Industrial Classification Code
SIP	State Implementation Plan
SO_2	sulfur dioxide
TSP	total suspended particulates
T/yr	tons per year
µm	micrometers
UTM	Universal Transverse Mercator
VOC	volatile organic compound

PURPOSE

The purpose for this memorandum is to satisfy the requirements of IDAPA 58.01.01 Sections 200 et seq. and 400 et seq., *Rules for the Control of Air Pollution in Idaho* (*Rules*) for Permits to Construct and Tier II Operating Permits.

PROJECT DESCRIPTION

Merritt Brothers Lumber Company (Merritt Brothers Lumber) located in Athol, Idaho has applied for a permit to construct (PTC) new equipment installed without a PTC at an existing lumber remanufacturing plant. Since the equipment is already installed, this will be processed as a combined Tier II operating permit and PTC.

Table 1.1 REGULATED EMISSION SOURCES

Permit Section	Source Description	Emission Controls
3	Cleaver Brooks gas-fired boiler, Model L-59569, 29.3 million Btu/hr, constructed in 11/74 and installed at the facility in 2/01	None
4	Lumber drying kilns (3), rated at 90 MM BF/yr, installed 2/01 and 3/02	None
5	Cyclone #1 – Old planer cyclone Cyclone #2 – Rip saw relay cyclone Cyclone #3 – Rip saw cyclone Cyclone and Baghouse #4 – New planer cyclone and baghouse Cyclone #5 – Finger-jointer cyclone Cyclone #6 – Finger-jointer cyclone (pull through) Cyclone #7 – Remanufacturing chips cyclone chip bin target box	None

FACILITY DESCRIPTION

Merritt Brothers Lumber upgrades random dimensional lumber delivered to the facility from off-site. The major operations involve the following:

- Remanufacturing where wide lumber is sawed and trimmed to various smaller standard dimensions.
- Three lumber drying kilns installed between February 2001 and March 2002 without a PTC.
- Planer mill.
- Finger jointing mill.
- Natural gas-fired boiler to generate steam for the dry kilns and installed in February 2001 without a PTC.

Chips and shavings are transported pneumatically to storage bins and shipped off-site by trucks.

SUMMARY OF EVENTS

March 21, 2002	DEQ received a PTC application dated March 14, 2002 from Merritt Brothers Lumber that included a modeling analysis of the new and existing non-fugitive emission sources at the facility.
May 28, 2002	DEQ deemed the application complete.
August 23, 2002	DEQ issued a proposed permit for public comment.
October 25, 2002	The public comment period closed. Comments were received and responses have been prepared.

PERMIT HISTORY

The following is a summary of the permit files available to EQ.

October 22, 1992	A PTC was issued for the installation of the 3 cyclones handling wood waste.

DISCUSSION

1. Emissions Estimates

   The emission calculations using the latest EPA and DEQ emission factors as submitted by the applicant and reviewed by EQ are summarized in Appendix A.

2. Modeling

   The ISCST3 modeling submitted by the applicant was rerun to better characterize the emission sources. A report on the modeling is presented in Appendix B.

3. Area Classification

   Merritt Brothers Lumber is located in Athol, Kootenai County, which is in AQCR 62. Kootenai County is classified as attainment or unclassifiable for all state and federal criteria air pollutants.

4. Facility Classification

   The facility is not a major facility as defined in IDAPA 58.01.01.006.55 or 008.10. It is not a designated facility as defined in IDAPA 58.01.01.006.27. The facility is not subject to New Source Performance Standards, in accordance with 40 CFR, Part 60; National Emission Standards for Hazardous Air Pollutants, in accordance with 40 CFR, Part 61; or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACT), in accordance with 40 CFR, Part 63. The Standard industrial Classification defining the facility is 2421. The facility is classified as a B source because actual and potential emissions of regulated air pollutants are less than 100 T/yr.

5. Regulatory Review

This OP and PTC is subject to the following permitting requirements:

a.	IDAPA 58.01.01.401	Tier II Operating Permit
b.	IDAPA 58.01.01.403	Permit Requirements for Tier II Sources
c.	IDAPA 58.01.01.404.01(c)	Opportunity for Public Comment
d.	IDAPA 58.01.01.404.04	Authority to Revise or Renew Operating Permits
e.	IDAPA 58.01.01.406	Obligation to Comply
f.	IDAPA 58.01.01.470	Permit Application Fees for Tier II Permits
g.	IDAPA 58.01.01.625	Visible Emission Limitation
h.	IDAPA 58.01.01.650	General Rules for the Control of Fugitive Dust
i.	IDAPA 58.01.01.200 et seq.	Requirements for Permits to Construct

6. Permit Conditions

The permit includes emission and throughput limits based on throughputs presented in the application. These limits only apply to non-fugitive sources, because fugitive emissions were not modeled. Emission limits have been set only for those pollutants whose potential (allowable) emissions exceed 10% of the significant emission rates defined at IDAPA 58.01.01.006.92.

Because compliance with the PM_{10} National Ambient Air Quality Standards (NAAQS) is dependent on the cyclones and baghouse not being operated more than 16 hrs/day as proposed by the applicant, this limitation has been included as a permit condition.

Compliance with the drying kiln throughput limit, the cyclone operating hour limit, and opacity limits will ensure compliance with the emission limits in the permit. No fuel throughput limit is needed for the boiler, because the emission limits are based on continuous operation.

7. AIRS

AIRS/AFS FACILITY-WIDE CLASSIFICATION[a] DATA ENTRY FORM

AIR PROGRAM / POLLUTANT	SIP	PSD	NSPS (Part 60)	NESHAP (Part 61)	MACT (Part 63)	TITLE V	AREA CLASSIFICATION A – Attainment U – Unclassifiable N – Nonattainment
SO_2	B						A
NO_x	B						U
CO	B						U
PM_{10}	B						U
PT (Particulate)	B						A
VOC	B						U
THAP (Total HAPs)	NA						NA
			APPLICABLE SUBPART				

[a] AIRS/AFS Classification Codes:

A = Actual or potential emissions of a pollutant are above the applicable major source threshold. For NESHAP only, class "A" is applied to each pollutant which is below the 10 ton-per-year (T/yr) threshold, but which contributes to a plant total in excess of 25 T/yr of all NESHAP pollutants.

SM = Potential emissions fall below applicable major source thresholds if and only if the source complies with federally enforceable regulations or limitations.

B = Actual and potential emissions below all applicable major source thresholds.

C = Class is unknown.

ND = Major source thresholds are not defined (e.g., radionuclides).

FEES

Fees apply to this facility in accordance with IDAPA 58.01.01.407. The facility is subject to a $10,000 application fee in accordance with IDAPA 58.01.01.407.01.

RECOMMENDATIONS

Based on the review of the application materials, and all applicable state and federal regulations, staff recommends that DEQ issue a proposed permit to Merritt Brothers Lumber. An opportunity for public comment on the air quality aspects of the proposed permit was provided in accordance with IDAPA 58.01.01.404.01.c.

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cc: Tom Harman, Coeur d'Alene Regional Office

APPENDIX A

EMISSION ESTIMATES FOR SOURCES AT MERRITT BROTHERS LUMBER COMPANY

Merritt Brothers Lumber Company Inc.
Athol, Idaho
Emission Inventory/Calculations
Potential Emissions

PRODUCTION

Dry Kilns	90,000	mbdft/yr
Planers	350,000	bdft/8-hour shift
Finger-jointer	100,000	bdft/10-hour shift
Hours of Operation	8,760	hours/yr

	UNITS/HR	TONS/HR	DENSITY	
Planer Hog - goes w/shavings	0.44	0.53	2400 lb/unit	Assumes 0.01 units/1000 bdft
Planer (Rip Saw) Sawdust	0.44	0.53	2400 lb/unit	Assumes 0.01 units/1000 bdft
Planer Shavings	2.73	3.28	2400 lb/unit	Assumes 0.0625 units/1000 bdft
Reman. Chips/Sawdust	1.09	1.31	2400 lb/unit	Assumes 0.025 units/1000 bdft
Finger-jointer	0.25	0.30	2400 lb/unit	Assumes 0.025 units/1000 bdft

Emitting Unit	TSP ton/yr	PM10 ton/yr	Lead ton/yr	SO2 ton/yr	NOx ton/yr	VOCs ton/yr	CO ton/yr	HAPs ton/yr
Planer, Fugitives								
Planer Hog	0.02	0.01	NA	NA	NA	NA	NA	NA
Planer Chipper Screen	0.02	0.01	NA	NA	NA	NA	NA	NA
Old Planer Chip Bin Truck Loadout	0.19	0.10	NA	NA	NA	NA	NA	NA
Planer Shavings Bin Truck Loadout	0.63	0.32	NA	NA	NA	NA	NA	NA
Fugitive Totals	0.85	0.43	0.00	0.00	0.00	0.00	0.00	0.00
Lumber Drying								
Drying Kilns	14.85	8.55	NA	NA	NA	67.50	NA	2.88
Planer Point Sources								
Old Planer Cyclone, Permit #1	13.22	6.61	NA	NA	NA	NA	NA	NA
Trim Saw and Hammer Hog Cyclone, Permit #2	0.77	0.38	NA	NA	NA	NA	NA	NA
In-Line Cyclone (pull-through), Permit #7	0.77	0.38	NA	NA	NA	NA	NA	NA
Rip Saw Cyclone, Permit #3	0.77	0.38	NA	NA	NA	NA	NA	NA
New Planer Cyclone, Permit #4	4.84	4.84	NA	NA	NA	NA	NA	NA
Chip Bin Target Box	1.92	0.96	NA	NA	NA	NA	NA	NA
Finger-Jointer Point Sources								
Finger Jointer Cyclone, Permit #5	0.22	0.11	NA	NA	NA	NA	NA	NA
Finger Jointer Cyclone (pull-through) Permit #6	0.22	0.11	NA	NA	NA	NA	NA	NA
Natural Gas Fired Boiler								
Cleaver Brooks Boiler	0.98	0.98	6.41E-05	0.06	12.83	0.71	10.78	0.01
Point Source Totals	38.54	23.30	6.41E-05	0.06	12.83	68.21	10.78	2.89
Plant Wide Total (tons/year)	**39.39**	**23.73**	**6.41E-05**	**0.06**	**12.83**	**68.21**	**10.78**	**2.89**

APPENDIX B

REPORT ON DISPERSION MODELING ANALYSIS

REPORT ON MODELING ANALYSIS FOR MERRITT BROTHERS

1. SUMMARY:

The pollutants identified in the permit application that are subject to the requirements of modeling were oxides of nitrogen (NO_x), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 µm (PM_{10}), sulfur dioxide (SO_2), and carbon monoxide (CO). The modeling analysis of criteria pollutants for all non-fugitive sources at the facility demonstrated compliance with the National Ambient Air Quality Standards (NAAQS) for all applicable averaging periods.

2. DISCUSSION:

2.1 Applicable Air Quality Impact Limits

This facility is located in Athol, Idaho which is designated an attainment or unclassifiable area for PM_{10}, CO, SO_2, and NO_x. As part of this Tier II application, the dispersion modeling analysis compared facility impacts (including background concentrations) to the NAAQS. Table 1 lists the applicable NAAQS.

Table 1. Applicable regulatory limits

Pollutant	Averaging Period	Significant Contribution Levels (µg/m³)[1, 2]	Regulatory Limit (µg/m³)[3]
PM_{10}	Annual	1	50
	24-hour	5	150
SO_2	3-hour	25	1,300
	24-hour	5	365
	Annual	1.0	80
CO	8-hour	500	10,000
	1-hour	2000	40,000
NO_x	Annual	1	100

1. IDAPA 58.01.01.006.93
2. Micrograms per cubic meter
3. IDAPA 58.01.01.577 for criteria pollutants

2.2 Background Concentrations

When conducting NAAQS modeling for non-PSD sources (i.e., Merritt Brothers), sources not explicitly included in the model are taken into account by adding a background concentration. DEQ provided the ambient air pollutants for the Athol area that were used in the calculation of the total NAAQS concentration. Table 2 lists background concentrations provided by DEQ.

Table 2. Ambient Air Background Concentrations

Pollutant	Averaging Period	Background Concentration (µg/m³)
PM_{10}	Annual	26
	24-hour	73
SO_2	3-hour	374
	24-hour	120
	Annual	18
CO	8-hour	5,130
	1-hour	11,450
NO_2	Annual	41

Source: DEQ

2.3 Modeling Impact Assessment

The procedures in the State of Idaho's *Air Quality Modeling Guideline* (DEQ 2002), as well as the EPA documents *Guideline on Air Quality Models* (EPA 2001) were followed in conducting the modeling analysis.

The Industrial Source Complex Model (ISC), including the Plume RIse Model Enhancements Model (PRIME), version 99020, was used in the compliance evaluation. All regulatory default options were used in the modeling. The area surrounding the facility within 3 kilometers is rural in nature as rural mixing heights were used in the model.

The remainder of the modeling analysis describes the emission rates, source parameters, building downwash parameters, ambient air boundary, receptor network, elevation data, meteorological data, and compliance evaluation.

The short-term and annual emissions limits in the permit were used in the modeling of Merritt Brothers and are shown in Table 3. The previous modeling analysis that was submitted by Lorenzen Engineering on behalf of Merritt Brothers modeled each emission point as a volume source. Volume source information is shown in Table 4. Per discussions with EPA and DEQ, volume source characterization is not appropriate for the specific emission sources at Merritt Brothers. All but one source was converted to either a stack or area source. The stack information and area-source parameters for each source that was used in this modeling are presented in Tables 5 and 6.

The physical effluent characteristics of the stack sources were separated by those that emit vertically, vent horizontally, and have rain caps. No cyclone at Merritt Brothers vents vertically. Per IDEQ guidance, both horizontal releases and rain cap obstructions are assumed to have 0.001 meters per second exit velocity. Horizontal sources are further modified by assuming a 0.167 meter exit diameter. When a hot obstructed source is an issue the exit diameter is adjusted by the following equation to conserve buoyancy:

$$\text{Virtual diameter} = 31.6 * d_s * v_s^{0.05}$$

Where

d_s = actual inside stack diameter (m)
v_s = actual stack exit velocity (m)

Stack heights, buildings, and other structures were included in the analysis because building downwash of released emissions may influence the plumes (which will tend to bring the plume closer to the ground near the structures). The elevation and location of each building at the facility was used in the U.S. EPA's Building Profile Input Program-PRIME (95086) to calculate the building downwash parameters.

The ambient air boundary for this project is defined as the fence line, where it exists. Fencing exists on the east, north and west sides of the facility. The southern end of the facility is wooded and remote, meeting the second level of facility control as described in Section 5.51.b of the DEQ's guidance document (DEQ 2002). All calculations of dispersion modeling impacts occur along or near the outside of this ambient air boundary.

Because the receptor grid submitted by the applicant met all requirements of the guidance document, it was used in this analysis as well. It incorporated a coarse receptor grid, boundary receptors at 25-meter spacing, and hotspot receptors placed at 10-meter spacing. A total of 5,000+ receptors were used.

The elevations of each receptor were derived from 30m resolution Digital Elevation Model (DEM) 7.5-minute quadrangle maps for the area.

Table 3. Short- and Long-term Emissions Used in Modeling for Merritt Brothers Permitting Project

Emissions Source	Source ID	Type of Emissions	PM_{10}	SO_2	CO	NOx	Lead	Arse
Natural Gas Fired Boiler	BOILER	Modeled Short-Term Emission Rate (lbs/hr)	0.22	0.02	2.46	NA	NA	N.
		Annual Emissions[a] (TPY)	0.98	0.08	10.78	12.83	6.41E-05	2.57E
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.22	0.02	2.46	2.93	1.46E-05	5.87E
Old Planer Cyclone (#1)	CYC1	Modeled Short-Term Emission Rate (lbs/hr)	1.51					
		Annual Emissions[b] (TPY)	6.61					
		Modeled Long-term Emission Rate[c] (lbs/hr)	1.51					
Trim Saw and Hammer Hog Cyclone (#2)	CYC2	Modeled Short-Term Emission Rate (lbs/hr)	0.088					
		Annual Emissions[b] (TPY)	0.39					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.09					
Rip Saw Cyclone (#3)	CYC3	Modeled Short-Term Emission Rate (lbs/hr)	0.088					
		Annual Emissions[b] (TPY)	0.39					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.09					
New Planer Cyclone/Baghouse (#4)	CYCBAG4	Modeled Short-Term Emission Rate (lbs/hr)	1.11					
		Annual Emissions[b] (TPY)	4.84					
		Modeled Long-term Emission Rate[c] (lbs/hr)	1.11					
Finger Jointer Cyclone (#5)	CYC5	Modeled Short-Term Emission Rate (lbs/hr)	0.025					
		Annual Emissions[b] (TPY)	0.11					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.03					
Finger Jointer Cyclone (pull through) (#6)	CYC6	Modeled Short-Term Emission Rate (lbs/hr)	0.025					
		Annual Emissions[b] (TPY)	0.11					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.03					
In-Line Cyclone (pull through) (#7)	CYC7	Modeled Short-Term Emission Rate (lbs/hr)	0.22					
		Annual Emissions[b] (TPY)	0.96					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.22					
Chip Bin Target Box	TARGBOX	Modeled Short-Term Emission Rate (lbs/hr)	0.22					
		Annual Emissions[b] (TPY)	0.96					
		Modeled Long-term Emission Rate[c] (lbs/hr)	0.22					
Kilns 1 - 3, Exhaust to 4 Heat Exchangers	KILNEXH1-4[d]	Modeled Short-Term Emission Rate (lbs/hr)	1.95					
		Annual Emissions[a] (TPY)	8.55					
		Modeled Long-term Emission Rate[c] (lbs/hr)	1.95					

[a] Annual Emissions based on 8760 hours per year of operation

[b] Annual Emissions based on 5840 hours per year of operation (16 hours per day)

[c] Calculated by dividing the annual emissions by 8760 hours in a year

[d] Total emissions from Kilns #1, #2, and #3 were emitted through the 4 stacks called, KILNEXH1, KILNEXH2, KILNEXH3, and KILNEXH4

Table 4. Volume source parameters submitted by Lorenzen Engineering for Merritt Brothers

Source ID	Coordinates UTMx, m	Coordinates UTMy, M	Base Elevation, Ft	Release Height[a], ft	Initial Lateral Dimension, ft	Initial Vertical Dimension, ft	Actual Volume Dimensions, X * Y * Z, ft	Short-term Emissions PM_{10}, Lbs/hr
BOILER	521,613	5,310,080	2,387	35.0	2.49	0.98	10.7 x 10.7 x 2.1	0.22
TARGBOX	521,605	5,310,110	2,387	50.0	1.87	23.26	8 x 8 x 50	0.22
CYC1	521,604	5,310,114	2,387	85.0	1.87	3.71	8 x 8 x 16	1.51
CYC2	521,590	5,310,090	2,387	50.0	1.41	23.26	6 x 6 x 50	0.087
CYC3	521,563	5,310,093	2,387	35.0	1.41	13.94	6 x 6 x 30	0.087
CYC4	521,606	5,310,107	2,387	20.0	120.01	9.28	516 x 516 x 20	1.48
CYC5	521,539	5,309,818	2,387	70.0	1.41	2.79	6 x 6 x 12	0.027
CYC6	521,539	5,309,793	2,387	30.0	1.41	6.99	6 x 6 x 15	0.027
CYC7	521,561	5,310,093	2,387	30.0	1.41	6.99	6 x 6 x 15	0.22
KILNS	521,633	5,310,062	2,387	50.0	100	23.26	430 x 430 x 50	1.95

Note: These parameters were not used in the final dispersion modeling analysis.

a. Center of volume source

Table 5. Stack Parameters for Merritt Brothers Permitting Project

Source ID	Horiz. Rain Cap or Vert.?	Coordinates UTMx, m	Coordinates UTMy, m	Base Elevation, Ft	Stack Egress Parameters Height, ft	Temp., °F	Velocity, m/s	Diam., ft
BOILER	Rain Cap	521,634	5,310,092	2,387	25	500	0.001	268[a]
CYC1	Horiz.	521,619	5,310,128	2,387	70	68	0.001	0.167
CYC2	Horiz.	521,613	5,310,096	2,387	50	68	0.001	0.167
CYC3	Horiz.	521,598	5,310,064	2,387	30	68	0.001	0.167
CYCBAG4	Horiz.	521,628	5,310,127	2,387	20	68	0.001	0.167
CYC5	Horiz.	521,585	5,309,824	2,387	60	68	0.001	0.167
CYC6	Rain Cap	521,583	5,309,820	2,387	20	68	0.001	3.0
CYC7	Horiz.	521,603	5,310,066	2,387	20	68	0.001	0.167
KILNEXH1	Vert.	521,675	5,310,092	2,387	30	155	7.2	3.0
KILNEXH2	Vert.	521,673	5,310,087	2,387	30	155	7.2	3.0
KILNEXH3	Vert.	521,672	5,310,081	2,387	30	155	7.2	3.0
KILNEXH4	Vert.	521,671	5,310,075	2,387	30	155	7.2	3.0

a. Virtual diameter, calculated because source has a rain cap restricting vertical momentum; however, Buoyancy flux was assumed to be conserved. The diameter was calculated using the following equation:

$$\text{Virtual diameter} = 31.6 * d_s * v_s^{0.05}$$

Where:

d_s = actual inside diameter (0.46 m)

v_s = actual exit velocity (31.9 m/s)

Table 6. Volume Source Parameters used in Modeling of Merritt Brothers

Source ID	Coordinates UTMx, M	Coordinates UTMy, m	Base Elevation, ft	Release Height[a], Ft	Initial Lateral Dimension[b], ft	Initial Vertical Dimension[b], ft	Actual Volume Dimensions, X x Y x Z, ft
TARGBOX	521,623	5,310,124	2,387	25.0	1.87	23.26	8 x 8 x 50

a. Center of volume source
b. Dimensions are based on ISCST3 guidance for ground-based volume source:
Initial Lateral Dimension = equivalent length of source/4.3
Initial Vertical Dimension = height of volume/2.15

Per discussions with DEQ, the closest meteorological station to the site is in Hayden, Idaho. One full year of meteorology was assembled from April of 2000 to March of 2001 for the North Idaho Power project. That data set is called the "Meyers Ranch" meteorology. The wind pattern is characterized by a bi-modal pattern that is consistent with the valley orientation of the Meyers Ranch site. The predominant wind direction is from the northwest about 20 percent of the time.

3. MODELING RESULTS FOR CRITERIA POLLUTANTS

The results presented in Table 7 show that the ambient air impacts due to this project are below the NAAQS for all pollutants and averaging times.

Table 7. NAAQS Impact Analysis Summary for Merritt Brothers Permitting Project

Pollutant	Averaging Period	Total Ambient Impact, µg/m³	Ambient Background Concentration, µg/m³	Total NAAQS Concentration, µg/m³	NAAQS, µg/m³	Percent of NAAQS, %
CO	1-hour[a]	29	11,400	11,429	40,000	29%
CO	8-hour[a]	11	5,130	5,141	10,000	51%
SO_2	3-hour[a]	0.2	543	543	1,300	42%
SO_2	24-hour[a]	0.04	144	144	365	39%
SO_2	Annual	0.008	24	24	80	29%
PM_{10}	24-hour[a]	54	73	127	150	85%
PM_{10}	Annual	9.7	26	33	50	71%
Lead	Quarterly[b]	< 0.00001	0.15	< 0.00001	1.5	0%
NOx	Annual	1.2	40	41	100	41%

a. Short-term compliance based on high-second high results.
b. Quarterly compliance based on monthly result.

4. Toxic Air Pollutants

The maximum annual concentrations were modeled using the emissions shown in Table 3 for four TAPs that exceeded their emission screening levels. The results are included in Table 8 and it shows that none of the acceptable ambient concentrations for carcinogens were exceeded.